

II. REMARKS

Claims 1-88 are pending. Four paragraphs of the disclosure have been amended. Attached hereto is Appendix A showing the changes made to the disclosure. The disclosure was amended to correct typographical errors. No new matter has been added.

Entry of this preliminary amendment, and early consideration of this case, are respectfully requested.

Respectfully submitted,

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APPENDIX A: MARKINGS TO SHOW CHANGES MADEParagraph on page 12, lines 21-30:

Nitride spacers 36 are then formed along the surfaces of poly block 32 that face [first] second trenches [30] 35. Formation of spacers is well known in the art, and involves the deposition of a material over the contour of a structure, followed by an anisotropic etch process, whereby the material is removed from horizontal surfaces of the structure, while the material remains largely intact on vertically oriented surfaces of the structure. Thus, nitride spacer 36 formation is accomplished by depositing a thin layer of nitride on exposed surfaces of the structure, followed by an anisotropic etch process, such as Reactive Ion Etch (RIE) which is well known in the art, until the nitride layer no longer covers FG poly layer 14. In the process, some silicon nitride 26 atop the silicon oxide 24 may also be etched leaving the blocks 32 protruding above the plane of the nitride 26. The resulting structure is illustrated in Fig. 2E.

Paragraph on page 18, line 17 to page 19, line 5:

Next, a thick nitride etch process is performed to etch away the exposed nitride layer 22 from the bottom of second trenches 35 until the poly layer 14 is observed, as illustrated in Fig. 4D. The etch mask PR is then stripped away. Nitride spacers 36 are then formed along the surfaces of poly block 32 that face [first] second trenches [30] 35. Nitride spacer 36 formation is accomplished by depositing a thin layer of nitride on exposed surfaces of the structure, followed by an anisotropic etch process, such as Reactive Ion Etch (RIE) which is well known in the art, until the nitride layer no longer covers FG poly layer 14. The next step is an oxidation process, which oxidizes the exposed polysilicon surfaces (i.e. polysilicon layer 14 inside of second trench 35, and polysilicon block 32) to form an oxide layer 38 over polysilicon layer 14 and another oxide layer 40 over polysilicon block 32, as illustrated in Fig. 4E. This oxidation step results in oxide layer 38 being formed in a lens shape with side edges thereof joining with FG side oxide walls 28, and in the formation of upwardly projecting sharp edges 42 at each side edge of polysilicon layer 14 located inside second trenches 35. The sharp edges 42 and the thickness of the insulation layer formed by layers 28/38 permit Fowler-Nordheim tunneling of the charges

therethrough. While not shown, an optional poly etch process can be performed before the formation of oxide layer 38. This optional customized anisotropic poly etch process etches away a portion of the top surface of poly layer 14, but leaves a taper shape in that top surface in the area next to poly blocks 32, which helps start the formation of sharp edges 42. The remaining process steps from the preferred embodiment starting with those discussed after Fig. 2F can then be performed to finish the formation of the final structure.

Paragraph on page 21, lines 1-7:

Nitride spacers 36 are then formed along the surfaces of poly blocks 32 and 32A that face [first] second trenches [30] 35. Nitride spacer 36 formation is accomplished by depositing a thin layer of nitride on exposed surfaces of the structure, followed by an anisotropic etch process, such as Reactive Ion Etch (RIE) which is well known in the art, until the nitride layer no longer covers FG poly layer 14 at the center of the second trenches 35. In the process, some silicon nitride 26 atop the silicon oxide 24 may also be etched leaving the blocks 32 and 32A protruding above the plane of the nitride 26. The resulting structure is illustrated in Fig. 6B.

Paragraph on page 21, line 21 to page 22, line 2:

The nitride spacers 36 and nitride layer 26 are then stripped away, preferably using a wet etch process (or other isotropic etch process). WL thin polysilicon spacers 44 are then added, as illustrated in Fig. 6D. The WL thin poly spacers 44 are formed by first depositing a thin layer of polysilicon, followed by an anisotropic etch process (e.g. RIE), which removes all of the thin layers of polysilicon except for WL thin poly spacers 44, along with poly layer 24 [and top portions of poly blocks 32 and 32A]. The poly blocks 32 and half of the WL thin poly spacers 44 form the control gates (described later) having notches that face the corresponding sharp edges 42, but are insulated therefrom by an insulation layer formed by FG oxide sidewalls 28 and oxide layer 38. An insulation deposition step, such as oxide deposition, is then performed, which fills the second trenches 35 with a block 90 of oxide. Excess oxide deposited outside the second trenches 35 is etched away, preferably in a CMP etch back process, leaving the tops of

oxide blocks 90 even with the tops of poly blocks 32 and 32A and WL poly spacers 44. The resulting structure is illustrated in Fig. 6D.